

REMARKS

The Office Action mailed May 11, 2004 has been reviewed and the comments of the Patent and Trademark Office have been considered. Claims 1-23 were pending in the application. Claims 1, 2, 5-7, 9-14, and 17-23 have been amended and no claims have been cancelled or newly added. Therefore, claims 1-23 are pending in the application and are submitted for reconsideration.

This amendment changes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, are presented, with an appropriate defined status identifier.

In the Office Action, claims 1-10, 12-20, 22, and 23 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. patent 6,330,556 to Chilimbi et al. (hereafter "Chilimbi"). Claims 11 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chilimbi, in view of U.S. patent 5,675,790 to Walls (hereafter "Walls"). Applicants respectfully traverse these rejections for at least the following reasons.

Each of the independent claims 1, 14, and 23 recite a method (or system/software) that operates a code cache in a dynamic instruction translator which (1) stores a plurality of *instruction* translations in a cold partition of the *code cache*, (2) determines whether the *instruction* translation stored in the cold partition is hot; and (3) moves the *instruction* translation to a hot partition when an instruction translation has been determined to be hot. None of the applied references relate to a code cache and, therefore, necessarily do not teach or suggest any of the claimed features related to the storage and movement of instruction translations between hot and cold partitions of a code cache.

Specifically, Chilimbi relates to partitioning of *data* structures into heavily referenced and less referenced portions with the heavily referenced *data* being kept in a hot object or partition. See col. 2, lines 36-43 of Chilimbi. This storing and partitioning of data in the cache is made clear through out the Chilimbi specification. For example, as shown in Figs. 2 and 3, Chilimbi discloses the data elements a, b, and c (of data structure A) and data elements x and y (of data structure B) being related in a field affinity graph of Fig. 3 so that data that have a temporal affinity can be co-located in a cache. See, for example, cols. 6-9 of Chilimbi that describe this process. Therefore, nowhere does Chilimbi teach or suggest management

for a *code* cache in which instruction translations are stored and moved between cold and hot partitions as recited in the pending independent claims. Therefore, Chilimbi does not anticipate the pending independent claims.

Furthermore, Walls does not cure the deficiencies of Chilimbi as noted above. Accordingly, the office action fails to make a *prima facie* case of obviousness against the pending claims. Therefore, the pending independent claims are patentable over the applied prior art.

It should be noted that the current specification discusses the different considerations that underlie code caches from caches that store data. See, for example, page 8, line 15 to page 9, line 2. In particular, the continuous tracking of data access would not be practicable for instruction translations that occur at much higher frequencies in many instances (for example, when executing a loop). Likewise, Chilimbi discusses splitting data structures based on affinity of data elements while the instructions or blocks of instruction cannot be split in that manner. Therefore, teachings of Chilimbi related to data caches do not teach or suggest the features related to code caches in the pending claims.

The dependent claims are also allowable for at least the same reasons as the independent claims on which they ultimately depend. In addition, they recite additional patentable features when considered as a whole.

In view of the above, applicants believe that the application is now in condition for allowance. An indication of the same is respectfully requested. If there are any questions regarding the application, or if an examiner's amendment would facilitate the allowance of one or more of the claims, the examiner is invited to contact the undersigned attorney at the local telephone number below.

Respectfully submitted,

August 10, 2004
Date

Aaron C. Chatterjee
Aaron C. Chatterjee
Reg. No. 41,398